# KODAK General Radiography Software

## User Reference Guide

**Health Imaging**

## Copyright

KODAK General Radiography Software User Reference Guide
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The image quality for display using the software is dependent on the hardware configuration and the transmission architecture chosen and may not be of primary diagnostic quality in all cases. Eastman Kodak Company, assumes no responsibility for the quality of displayed image data.

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# Introduction

## About KODAK General Radiography Software

KODAK General Radiography Software, running on Microsoft Windows 2000 Professional operating system, digitizes computed radiography (CR) plates—using only the ACR-2000 desktop scanner—or radiology films using one of the LS series of desktop scanners. The scanned image files are DICOM 3.0-compliant. You can set up the software to perform DICOM operations of sending, querying, retrieving, printing, and archiving image files over a local area network (LAN) or wide area network (WAN) to other DICOM nodes.

You can use KODAK General Radiography Software to:

- Scan CR plates or radiology films and produce digitized images for use with a primary diagnostic viewing station
- View and manipulate images in thumbnail and full-sizes
- Annotate images
- Create Patient and Study information to attach to images
- Apply image processing and window/level capabilities to images
- Send images to other DICOM nodes in compressed or uncompressed formats
- Print images to a Windows printer or DICOM printer
- Perform quality assurance self-test functions
- Use the drag-and-drop feature to move images in the Patient list
- Query a modality worklist broker to download worklist information about scheduled procedures and related patient demographic data.

- Query and Retrieve to and from other DICOM nodes
- Archive and Retrieve patient records to and from a local or DICOM archive
- Restore unarchived CR images, as well as permanently delete unarchived CR images, from the Recycle Bin

## *Starting and Quitting KODAK General Radiography Software*

### Starting KODAK General Radiography Software

- Click **Start,** scroll to *Programs, Eastman Kodak Company,* then click KODAK General Radiography Software. The ***Application Main Window*** opens.

### Quitting KODAK General Radiography Software

You cannot quit KODAK General Radiography Software while DICOM operations are in progress. If you attempt to quit the program during a DICOM operation, the program displays a message that you cannot exit until the DICOM request is complete.

- To quit, click the **X** in the upper right corner of the window.

## *Message Box Symbols*

A message box conveys information about a particular situation or condition.

*Note:* Always read Message boxes thoroughly for proper operation of the scanning software.

Message boxes in the scanning software include a graphical symbol that indicates what kind of message is being presented. The following symbols are included in the scanning software message boxes:

• **Information** — Provides you information about the results of a command.

- **Question** — Provides a message that requires you to answer a question about a command.

- **Warning** — Alerts you to a condition or situation that requires your decision and input before proceeding; such as an impending action with potentially destructive, irreversible consequences.

- **Critical** — Informs you of a serious problem that requires intervention or correction before work can continue.

## What Is DICOM 3.0?

KODAK General Radiography Software creates Digital Imaging and Communications in Medicine (DICOM) 3.0-compliant images. The DICOM standard defines formatting, storage, and transmission protocols for digital images. These protocols allow medical images and the clinical information associated with those images to be captured, transferred, viewed, and manipulated with DICOM-compatible hardware and software. The DICOM standard defines a storage hierarchy of Patient, Study, Series, and Image.

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care issues. The parties recognize and understand that data is generated through the scanning of CR plates or radiology film and it is to be used with a primary diagnostic viewing station.

The image quality for display using the software is dependent on the hardware configuration and the transmission architecture chosen and may not be of primary diagnostic quality in all cases. Eastman Kodak Company assumes no responsibility for the quality of displayed image data.

All manipulation processes are designed for images acquired with Eastman Kodak Company ACR systems. All other types of images may produce unexpected results.

Printing too many large images may result in printer malfunction.

# Scanning Setup

## Hardware Setup

**WARNING: Improper equipment operation may result in injury to personnel due to the laser. All CR and digitizer users must be trained in the proper operation of equipment by certified service providers. Improper installation, hardware configuration, and maintenance could result in improper image acquisition and therefore improper diagnosis.**

To optimize system performance, ensure you:

- Use only approved hardware specified in the *Hardware Compatibility List* found in the KODAK General Radiography Software distribution package.
- Follow the workstation and Eastman Kodak Company hardware configuration and set-up instructions.
- Follow the workstation and Eastman Kodak Company hardware guidelines for periodic system maintenance. For complete information on Eastman Kodak Company digitizer operations, see the *LSDT Service Manual* or for CR scanning operations, see the *ACR-2000 Service Manual*.
- Periodically perform preventive maintenance of your local hard drive(s) using Windows 2000 Administrative Tools.

*Note:* Before beginning a scanning session, ensure the scanner is on and warmed up for five minutes.

## Managing Disk Space

At program startup and at the beginning of each scan operation, the application reads the available space on the drive where the directory for images is located, then permits you to scan CR plates or radiology film if there is enough space. If there is not enough space, a message advises you to free up disk space. When this message occurs, the program completes any scanning operation in progress, and does not allow any more scans until disk space is available. You can free up disk space by deleting patient records.

For information on archiving to free up disk space, see *Archiving Images* on page 65.

## Performing the ACR-2000 Self-Test

CR Only

**WARNING: Run the Self-Test regularly to ensure acceptable ACR-2000 performance.**

At application startup and at any time you click **Self-Test** (found on the Patients toolbar), the program performs a quality assurance self-test to verify that the ACR-2000 meets acceptable performance standards. Be sure you perform the self-test function at least once per day.

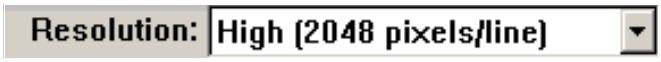
*Note:* Image quality and self-test results are affected by ambient light.

The self-test function creates output files that report the overall status of the ACR-2000 on the basis of the self-test results. You can view results of the self-test functions via:

- Status Window
- Printed Test Report

## *Resolution*

Before beginning a scanning session, you can change the resolution at which to scan CR plates or radiology film on the ***Preview*** window toolbar.




- On the ***Preview*** window toolbar, from the **Resolution** drop-down list, select the scanning resolution at which you want to scan a CR plate or radiology film.

**WARNING: Images scanned on the ACR-2000 scanner at 1K (1024 pixels/line) or lower resolution may not be of diagnostic quality.**

# Scanning

**WARNING: All images must have patient identification burned into the image at the time the x-ray is taken.**

Note: While scanning is in progress, you cannot view or send images.

## Specifying Image Assignment

Before you scan CR plates or single films, you must select a Patient, Study, or Series. For Scanning Multiple Films, the Database line or Unassigned Images line should be selected.

## Scanning a Single CR Plate

CR Only

1. On the ***Patients*** window, select a Patient or Study, to which you want to assign the image.
2. Darken the room, take the CR plate out of the cassette, and position the CR plate on the feed slot of the scanner with the exposed side of the CR plate facing the feed guide.
3. Click **Scan** on the ***Preview*** window toolbar. The Image Setup Window is displayed.
4. Select a **Body Part**, **Projection** and **Grid Removal** option.
5. Click **Scan**. The CR plate is scanned and advances to the exit tray and a thumbnail image appears in the ***Preview*** window.

## *Scanning a Single Film*

Digitizer Only

1. Ensure the **READY** light is on.

*Note:* A blinking READY light indicates the scanner has not been reset.

2. At a scanner with a **single-sheet feeder**, center the film in the slot top down, left edge on the left side.
3. On the **Patients** window, select a Patient or Study, (or the DICOM Database or Unassigned Images line) to which you want to assign the image.
4. Click **Scan** on the Preview window toolbar.
5. The film is scanned and advances to the film output area and a thumbnail image appears in the ***Preview*** window.

## *Scanning Multiple Films*

Digitizer Only

You can scan films in a batch.

### Loading the Film Feeder

Load films in the following way to produce the proper orientation for viewing the scanned images.

### Bulk Film Loader

- Insert films in the bulk film loader with the top of the film down, left edge on the left side, with the film loaded to the left side of the bulk loader.

### Six-Sheet Film Feeder

- Insert films in the six-sheet film feeder left edge on the left side, with the film centered in the film feeder.

### Film Feeder/Bulk Loader Batch Scanning

1. Press the film feeder **Reset** lever if you are using the 6-sheet feeder. Ensure the **READY** light is on.

*Note:* A blinking READY light indicates the scanner has not been reset. If you attempt to scan multiple films with a six-sheet feeder before resetting the scanner, a jam will occur.

2. At a scanner with a **six-sheet feeder**, center the first film in slot 1 top down, left edge on the left side. Continue loading until all six slots are filled.
3. At a scanner with **a bulk film loader**, load all films to the left side of the bulk film loader. Film sizes and orientations may be mixed in the bulk film loader as long as no film is more than 14-inches wide.
4. From the ***Patients*** window, select:
   - the Patient, Study, or Series to which you want to scan an image

   – or –

   - the Database Line

   – or –

   - if available, select the Unassigned Images folder.
5. Click **Scan** from the **Preview** window toolbar. The films are scanned and advance to the output area and thumbnail images appear in the ***Preview*** window.

## *Scan Wizard*

CR Only

1. Darken the room, take the CR plate out of the cassette, and position the CR plate on the feed slot of the scanner with the exposed side of the CR plate facing the feed guide.
2. Click **Scan Wizard** . The **Select Patient** dialog appears.
3. Enter the **Accession Number** for the patient and click **Search**. The program searches for the patient information from the Broker(s) in your address book.

   One of the following occurs.

   - If a match is found, the ***Image Setup*** window displays. Go

to step 4.

**WARNING: Ensure the correct match has been found for the Accession number while using the Scan Wizard; otherwise, you could have the incorrect patient information.**

- If no match is found in the Broker(s), a message states that the patient information is not found and suggests you Create a New Patient.
- If multiple patients have the same accession number, a warning appears. Query the broker from the **Main Application** window and scan the image from there.
- If no Broker(s) is in your address book, the **Select Patient** dialog box displays. Click **Create Patient**.
- In the **Image Setup** window, if the patient information is incorrect, click **Select Patient**, and enter a different **Accession Number**.

4. If the patient information is correct, select a **Body Part**, **Projection** and **Grid Removal** option.
5. Click **Scan**. The **Send/Review** window is displayed.

**Warning: The displayed image is intended for ensuring correct image orientation and not for diagnosis.**

6. From the **Send/Review** window, you can view a full screen of the image by clicking **View Full Screen Image,** then click **X** in the Image Display window to return to the **Send/Review** window.
7. Manipulate the image by using the Flip and Rotate and Undo functions, and click **Save** to save any changes.
8. To print, send, or archive the scan, select the **Destination** from the drop-down list and click **Send**.
9. You can scan a new image, by clicking **New Scan** and return to the **Image Setup** window or to add a new patient, click **New Patient**.
10. To cancel, click **Quit**.

## *Stopping the Scanner*

***CAUTION:*** **All scanner users must be trained in the proper operation of equipment by certified service providers. Keep all loose or hanging objects, such as clothing, hair, and jewelry, away from the scanner feed slot. Failure to comply may result in injury to personnel or damage to equipment.**

***WARNING*****: Stopping the scanner or pressing the Scan Abort button results in lost CR plate content and may result in an improper image acquisition or a lost image.**

For personnel safety reasons, you can stop a scanner:

- At the scanner, press **Scan Abort.** The scanner motor stops and the scanning operation ceases.
- To clear a CR plate or sheet of film from the scanner, press **Scan Abort** again to reverse the motor feed direction.
- To stop the motor, press **Scan Abort** one more time.

# Main Application Window

You access all program functions through the ***Main Application*** window. The main window contains three scalable window panes, with their associated toolbars, a status bar, and a Recycle Bin.

## Window Resizing

You can resize the windows by clicking on the dividing line between the windows and dragging.

## Toolbars

Toolbars display buttons and commands for each window pane.

## Status Bar

The status bar is located at the bottom of the ***Main Application*** window. The Status Bar displays the status of file transmissions, the file currently being transmitted to another DICOM node, and the make and model of the attached scanner.

## Recycle Bin

You can delete Patients, Studies, Series, and Images by dragging them from the Patients and Preview window and dropping them into the Recycle Bin icon located on the lower-left corner of the

***Main Application*** window**.** For more information see *Deleting Images from the Preview Window* on page 19 and *Deleting Images* on page 69.

## Communications Window

The *Communications* window is used for creating and managing address entries, establishing communications with other DICOM nodes, querying a modality worklist broker, archiving (both locally and to a DICOM archive), and printing to a high-resolution DICOM printer.

## Patients window

The Patients window is used for creating and managing the Patients list, entering patient/study information associated with each image in the database; performing quality assurance self-test functions (CR only); activating the Scan Wizard (CR only), changing the font sizes, and viewing, manipulating, processing, and printing (Windows printers only) images via the **Image Display** window. For more information, see *Patients* on page 21.

## Preview Window and Toolbar

The ***Preview*** window displays thumbnails of scanned images. You can use the scroll bar at right to view thumbnail images when there are more than can fit on the window.

From the ***Preview*** window, you can:

- Start scanning operations
- Select scanning resolution
- Manipulate thumbnails of scanned images
- Save manipulations to thumbnails
- Use the drag-and-drop feature to move images to the Recycle Bin

### Preview Toolbar

You can manipulate image display settings and some scanning settings from this toolbar. When you click a button, the setting for that function is applied.

#### Save

Click **Save** to save any image manipulations you applied to an active image.

## Flip and Rotate Functions

The toolbar has two flip and two rotate functions that you use to ensure proper orientation of the image prior to saving or sending:

#### Flip Vertical

Click this button to flip an active image vertically.

#### Flip Horizontal

Click this button to flip an active image horizontally.

#### Rotate Left

Click this button to rotate an active image 90 $^{o}$ left.

#### Rotate Right

Click this button to rotate an active image 90 $^{o}$ right.

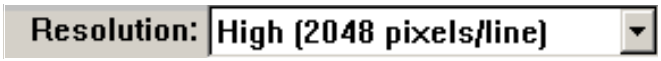
## Undo

Click **Undo** to revert all image manipulations you applied to an active image to the last saved version of the image.

## Scan

Click **Scan** or press **F12** to start the scanning operation.

### Resolution




From the **Resolution** drop-down list, select the resolution at which you want to scan the CR plate or radiology film.

**Warning: Images scanned on the ACR-2000 scanner at 1K (1024 pixels/line) or lower resolution may not be of diagnostic quality.**

### Image Markings

KODAK General Radiography Software marks thumbnail images to show you the status of the image. There are two marks used:

- Image Number — Thumbnail images display in the order scanned and are marked with a number in the lower-left corner of the image.
- Selection — When you select a thumbnail image to view, manipulate, or drag to the Recycle Bin, an *X* appears in the lower-right corner of the image to indicate an active image.

### Manipulating Thumbnail Images

You can change thumbnail image orientation and save or undo the results from the ***Preview*** window toolbar. The right-click menu enables the same functions in addition to displaying or deleting the image from the database.

## Deleting Images from the Preview Window

Deleting images from your local database while you are attempting to send files to a destination may cause the transmission to fail; therefore, complete your send action before deleting images.

*Note:* Before you delete an image from your local database you should first archive it to a local or DICOM archive. For more information about archiving, see *Archiving Images* on page 65.

To delete an image, do one of the following:

- On the *Preview* window, select a thumbnail image. To make multiple selections, hold the CTRL key while clicking. The image or images are marked with an x. Drag the image(s) from the *Preview* window and drop them in the Recycle Bin. Confirm or cancel your delete action at the prompt.
- On the *Preview* window, right-click a thumbnail image. To make multiple selections, hold the CTRL key while left clicking, then right-click any selection. The right-click menu appears. Scroll to *Delete,* then click. Confirm or cancel your delete action at the prompt.
- On the *Preview* window, right-click a thumbnail image. To make multiple selections, hold the CTRL key while left clicking. Press the keyboard Delete key.

## Font Size

You can alternate between normal and large font size in the ***Patients*** and ***Communications*** window by toggling the font size button.

- From the ***Patients*** window toolbar, click **Font Size** .

# Patients

From the ***Patients*** window, you can:

- Create or edit Patient and Study Information
- Use the drag-and-drop feature to move Images, Studies, or Series into another Patient, Study, Series
- Manage the Patients list through sorting, archiving, and deleting patient records
- Select images from Patients, Studies, and Series to view, send, print, manipulate, window/level, and process
- Perform quality assurance self-test functions — only on an attached ACR-2000 scanner
- Drag-and-drop Patients, Studies, Series, and Images to destinations on the *Communications* window for transmission to another location, archiving to a local or remote DICOM archive, DICOM printing, or to delete via the Recycle Bin
- Access the Scan Wizard (CR only)
- Access the application Setup window
- Access online help
- View information about KODAK General Radiography Software and the workstation disk space and memory

## *Patients Toolbar*

Select a button from the Patients toolbar to activate the following functions.

### New Patient

Click **New Patient** to open the ***Patient and Study Information*** window, where you enter associated medical information about a new patient. For more information, see *Patient and Study Information* on page 27.

### Patient/Study Information

Click **Patient/Study Information** to open the ***Patient and Study Information*** window, where you view associated medical information for the selected Patient or Study. If there are no Patients or Studies on the window or if a Patient or Study is not selected, **Patient/Study Information** appears dimmed. For more information, see *Patient and Study Information* on page 27.

### Display Images

Click **Display Images** to open the ***Image Display*** window and display patient images you have selected. For more information, see *Image Display Window and Toolbars* on page 37.

## Self-Test

CR Only

Click **Self-Test** to perform an ACR-2000 scanner self-test and open the ***Self-Test*** window, which displays the overall status of the ACR-2000 scanner. The self-test button reflects the status of the last self-test performed. For more information, see Performing the ACR-2000 Self-Test.

*Note:* This button will only appear on the toolbar if an ACR-2000 scanner is attached to the KODAK General Radiography Software workstation.

## Scan Wizard

CR Only

Click **Scan Wizard** to save time and enable KODAK General Radiography Software to prompt you to enter an accession number and other patient information necessary for scanning images into automatically displayed windows. For more information, see Scan Wizard.

## Font Size

Click **Font Size** to enlarge the information in the ***Patients*** window. Click **Font Size** again to toggle back to the smaller font. For more information, see Font Size.

## Setup

Click **Setup** to open the ***Setup*** window, which allows you to view settings and administrators to configure Window Level, Scanner, Modality, Image Processing, DICOM Communication, and Application Settings. For more information, see the *KODAK General Radiography Software Administrator's Reference Guide.*

### Help

Click **Help** to display online help.

### About

Click **About** to display information about KODAK General Radiography Software and the workstation disk space and memory.

## *Patients List*

The Patients list displays patient information in the DICOM hierarchy format: Patient, Study, Series, Image. Each level shows the information appropriate to that level.

You can display or hide a level by clicking the + or – above that level. Some of the levels of the Patients list can be expanded by clicking the + at the DICOM database level.

### Patients List Column Headings

The Patients list displays information retrieved from the ***Patient and Study Information*** window.

- **Patient Name —** Name of the patient.
- **Patient ID** —Identification number assigned to the patient.
- **Number of Images** — Total number of images in the Patient, Study, or Series levels.
- **Modality** — The specific modality associated with the image.
- **Date & Time** — Date and time the study, series or image was created.
- **Size** — Size, in kilobytes or megabytes (KB or MB), of the Patient, Study, Series, and Image files or levels. The total size at the Patient level may not equal the sum of the Study,

Series, and Image levels due to rounding.

- **Priority** — Stat, Regular, Low. The Patient level displays the priority of the highest priority series.
- **Accession Number** — Patient visit identification. This displays at the Study level.
- **Archived** — The archive status of patient images.
  - **N** — Image is not archived.
  - **Y** — Image or study is archived on either the local archive or a DICOM archive.

Note: Images received from remote locations are considered archived by KODAK General Radiography Software and are marked Y.

- **Read** — Indicates whether image has been marked as Read or Unread.
  - **N** — Image is unread.
  - **Y** — Image is read.

## Patients List: Viewing and Sorting

### Viewing all columns/patients:

- Use the scroll bars located on the right side and at the bottom of the window.

### Resizing a column:

- Click on a dividing line to the right of a column heading and drag it to resize the column.

### Sorting by column heading:

- Click any column heading to sort the list by the selected column heading and to alternate between ascending and descending sort order.

## Selecting, Viewing, and Manipulating the Patients List

### Patients Window Resizing

The ***Patients*** window displays the Patients list, which presents patient information in the DICOM hierarchy format. You can expand some levels in the list by clicking the + or – above that level. The entire patients list can be expanded by clicking the DICOM database level.

You can resize the ***Patients*** window by clicking on the dividing line at the top of the window and dragging up or down or on the dividing line to the left of the window and dragging right or left. You can use the scroll bars at the right side and at the bottom of the screen to view patient information when there is more information presented than can fit on the window.

### Item Selection

From the Patients list you can select one or more Patients, Studies, Series, or Images. To select multiple items, **CTRL left-click** multiple items.

### Right-Click Menu

The Patients right-click menu provides access to some of the Patients toolbar functions. For descriptions of the toolbar functions, see *Patients Toolbar* on page 22.

### Searching for a Patient or Study for Image Setup

CR Only

To search for a Patient or Study for Image Setup, do the following:

1. Select the Database line on the Patients Window.
2. Click **Scan** . The ***Image Setup*** window is displayed with the **Patient ID** and **Accession Number** blank.
3. Enter either a **Patient ID**, if you are searching for a Patient, or **Accession Number**, if you are searching for a Study.
4. Select a **Body Part**, **Projection**, and **Grid Removal** option.
5. Click **Scan**.

# *Patient and Study Information*

The ***Patient and Study Information*** window displays clinical information associated to each image in a Patient/Study/Series.

- Click **New Patient** from the Patients Window.

## Patient and Study Information Fields

You must type a value in all fields marked by an asterisk. The Patient and Study Information fields are:

### Patient Data

- ***Patient Last Name** — Last name of the patient.
- **Patient First Name** — First Name of the patient.
- ***Patient ID** — Identification number assigned to the patient, which you type using up to 64 case-sensitive alphanumeric characters, excluding the apostrophe (’), the backslash (\), and the pipe (|).
- **Social Security Number** — SSN of the patient, which you type using alphanumeric characters.
- **Date of Birth** — DOB of the patient, which you can select from the drop-down box. You must enter a date equal or previous to the current date.
- **Sex** — Gender of the patient, which you select from a drop-down list displaying M (male), F (female), and O (other), where O is the default value.

### Study Data

- **Accession Number** — Patient visit ID, which you type using alphanumeric characters.
- **Study Description** — Notes on the description of the study performed, which you type using alphanumeric characters.
- **Institution** — Location where the study was conducted, which you type using alphanumeric characters.
- **Operator** — Name of the technologist who captured the study, which you type using up to 64 alphanumeric

characters.

- ***Study ID** — Study identification number, that is generated by the program using alphanumeric characters (excluding the apostrophe) and which you can modify.
- **Priority Code** — Priority code of the patient, which you select from a drop-down list displaying Low, Regular, and Stat, where Regular is the default value.
- **Institution Phone** — Phone number of the location where the study was conducted, which you type using up to 16 alphanumeric characters.
- **Study Date** — System generated date that the study was created. Select a date from the drop-down box.
- **Study Time** — System generated time that the study was created, which can be modified by you and typed in the 24-hour time format ***hh:mm:ss***.

## Series Data

- ***Modality** (Digitizer only) — Type of radiography performed, which you select from a drop-down list displaying the values that were set up during KODAK General Radiography Software installation.

## Physician Data

- **Referring Physician** — Name of the referring physician, which you type using up to 64 alphanumeric characters.
- **Referring Physician Phone** — Phone number of the referring physician, which you type using alphanumeric characters.
- **Requesting Physician** — Name of the physician who requested the study, which you type using up to 64 alphanumeric characters.
- **Requesting Physician Phone** — Phone number of the requesting physician, which you type using alphanumeric characters.

## Exam Information

- **Exam Information** — Information you type using alphanumeric characters and punctuation. Use the scroll bar on the right side of the window when there is more information than can be displayed by the text box.

## Patient and Study Information Functions

### New Patient

Click **New Patient** to create a new patient, automatically save the current record, and clear text boxes for new input.

### New Study

Click **New Study** to create a new study, automatically save the current record, and clear text boxes for new input.

### Save

Click **Save** to save the current values entered in the ***Patient and Study Information*** window and return to the ***Application Main Window.***

### Cancel

Click **Cancel** to return to the ***Application Main Window*** without saving changes.

## Selecting a Patient for Image Setup

To select a Patient for the **Image Setup** window, do the following:

1. Select a **Patient Name** from the **Patients** window.
2. Click **Scan** . The **Image Setup** window is displayed with the **Patient ID** in the Patient Box.
3. Select a **Body Part**, **Projection**, and **Grid Removal** option.
4. Click **Scan**.

## Selecting a Study for Image Setup

To select a Study for the **Image Setup** window, do the following:

1. Select a **Patient Study** from the **Patients** window.
2. Click on **Scan** . The **Image Setup** window is displayed with the **Patient ID** and **Accession Number** in the Patient Box.
3. Select a **Body Part**, **Projection**, and **Grid Removal** option.

4. Click **Scan**.

## Creating a New Patient

1. Click **New Patient** on the Patients toolbar. The ***Patient and Study Information*** window opens.
2. Type the new patient information. Fields requiring input are marked with an asterisk. For a list of required fields and descriptions of all Patient and Study Information fields, see Patient and Study Information Window.
3. Do one of the following:
   - Click **New Patient** to save the current entry and create a new patient.

   – or –

   - Click **New Study** to save the current entry and create a new study.

   – or –

   - Click **Save** to save the entry, close the window, and return to the ***Patients*** window.

   – or –

   - Click **Cance**l to close the window without saving any entries and return to the ***Patients*** window.

## Editing a Patient Record

*Note:* Images received from a remote location, or that have been archived, cannot have their Patient Name or Patient ID information edited.

To edit a patient's demographic information:

1. Select a **Patient** on the Patient List. Click **Patient**/ **Study**

**Information** on the Patients toolbar. The ***Patient and Study Information*** window opens.

2. Edit the patient information. Only fields in the **Patient Data** and **Exam Information** portion of the form will be editable. For a description of all Patient and Study Information fields, see Patient and Study Information Window.
3. Click **Save** to save the edited entry or click **Cance**l to close the window without saving any entries.

## Creating a New Study

1. Click **Patient and Study Information** . The ***Patient and Study Information*** window opens.
2. Click **New Study**.
3. Type the new study information. Fields requiring input are marked with an asterisk. For a list of required fields and descriptions of all Patient and Study Information fields, see Patient and Study Information Window.
4. Do one of the following:
   - Click **New Study** to save the current entry and create a new study.

   – or –

   - Click **New Patient** to save the current entry and create a new patient.

   – or –

   - Click **Save** to save the entry, close the window, and return to the ***Patients*** window.

   – or –

   - Click **Cancel** to close the window without saving any entries and return to the ***Patients*** window.

## Editing a Study Record

*Note:* Images received from a remote location, or that have been archived, cannot have their Patient Name or Patient ID edited.

To edit a study's demographic information:

1. Select a study on the Patient List. Then click **Patient/Study Information** on the Patients toolbar. The ***Patient and Study Information*** window opens.
2. Edit the study information. Only fields in the **Study Data** and **Physician Data** portion of the form will be editable. For a description of all Patient and Study Information fields, see Patient and Study Information Window.
3. Click **Save** to save the edited entry, or click **Cance**l to close the window without saving any entries and return to the ***Patients*** window.

## Moving an Image to another Patient, Study or Series

1. From the ***Patients*** window, select the desired image from the Patient, Study, Series or Unassigned Images (digitizer only) category.
2. Drag the image and drop it into an existing Patient, Study or Series category.
3. Confirm your action by clicking **Save** or to stop the action, click **Cancel**.
4. If the desired Patient, Study or Series is not listed in the ***Patients*** window, Create a New Patient first, then use the drag-and-drop feature to move the image to the desired location.

**WARNING: If you have moved an image, ensure that it is in the correct location listed in the Patients window; otherwise the image could be assigned to the wrong patient, study, or series.**

## Unassigned Images

Digitizer Only

An unassigned images category is automatically created in the ***Patients*** window when images are scanned with a film digitizer without first selecting a patient, study, or series. With the Database line or existing Unassigned images category selected, the scanned images will be displayed in the respective category. If the Database line is selected and an Unassigned category does not exist, an Unassigned category is created. This process is useful when scanning multiple films.

## Archiving Patient Records

*Note:* If you are performing scans with an ACR-2000, you should always archive all images acquired at your workstation.

You can archive patient records to either or both a local archive and a DICOM archive .

# View and Manipulate Images

## Selecting Images

You can select images from the Main Application window in the following ways:

- **Left Click —** Provides the standard method of selecting a thumbnail image. You can then apply a function from the toolbar.
- **Control Left-Click** — Allows you to select multiple non-contiguous items. You can then apply a function from the toolbar or right-click menu to the active images.
- **Right Click —** Selects a thumbnail image and opens the right-click menu, which duplicates some of the toolbar functions for the active image.

## Displaying Images

### Individual images

Do one of the following to select images to display from the Patient list:

- Double-click the patient/study/series/image.
- Select the patient/study/series/image and click **Display Image** on the ***Patients*** window toolbar.

- Select the patient/study/series/image. Right-click and select **Display Image** from the right-click menu.

### Multiple Images

Do one of the following to select multiple images to display from the Patient list:

- To select multiple continuous patients/studies/series/ images to display, select a continuous block of lines, click the first line, press and hold **SHIFT**, and then click the last line. Then click **Display Image** .
- To select multiple non-adjacent patients/studies/series/ images, from the Patient list, press and hold **CTRL** while you click each line. Then click **Display Image** .

## *Applying Functions to Images*

### Apply Functions to an Active Image

From the Image Display window:

1. Open an image.
2. Click a button on the toolbar. Repeat to apply more functions to the image.
3. Click **Save** to save the image manipulations or click **Undo** to revert to the last-saved version of the image.

### Apply a Function to a Single Thumbnail

From the Preview window:

1. **Right-click** a single thumbnail image. The right-click menu appears.
2. Scroll to the function you want to apply, then click. The right-click menu disappears.

3. Click **Save** to save the image manipulations or click **Undo**

.

### Apply a Function to Multiple Thumbnail Images

From the Preview window:

1. **CTRL** left-click multiple thumbnail images. The images are marked with an ***X***.
2. **CTRL** right-click any selection. The right-click menu appears.
3. Scroll to the function you want to apply, then click. The right-click menu disappears.
4. Click **Save** to save the image manipulations or click **Undo**

.

### Apply a Function to Multiple Items in the Patient List

From the Patients window:

1. **CTRL left-click** multiple items.
2. **CTRL right-click** any selection. The right-click menu appears.
3. Scroll to the function you want to apply, then click. The right-click menu disappears.

## *Image Display Window and Toolbars*

In the Image Display window, you can view, manipulate, process, window/level, annotate, send and print patient images.

### Image Display Toolbars

When you click a button, the button's function is applied to the active image.

## Active Images

An image becomes active when you click it; then use toolbar functions to manipulate the image.

### Previous

Click **Previous** to display the previous image in a multiple selection. **Previous** is available only when a previous image exists.

### Next

Click **Next** to display the next image in a multiple selection. **Next** is available only when the next image exists.

### Save

Click this button to save any image manipulations you applied to an active image.

### Windows Print

Click this button to send a selected image to a Windows printer. For more information, see *Printing to a Windows Printer* on page 62.

### Magnification

Use Magnification to:

- Set a magnification factor at which to zoom.
- Zoom in on an image.
- Zoom out on an image.
- Magnify a portion of an image.
- Pan across an image.

Magnification changes do not forward when you send an image to other DICOM nodes.

### *Set a Magnification Factor at Which to Zoom*

1. Position the cursor over the **Magnifier** button.
2. Double-click **Magnifier** to activate the magnification factor, which appears in the status bar at the bottom of the screen.
3. Continue to double-click **Magnifier** to advance to the magnification factor at which you want to zoom.

### *Zoom In on an Image*

1. Click **Magnification** to activate the magnifier cursor.
2. Double click an image. Each double-click of the image zooms in according to the magnification factor currently in effect, which appears in the status bar at the bottom of the screen.

### *Zoom Out on an Image*

1. Click **Magnification** to activate the magnifier cursor.
2. Double right-click an image. Each double right-click of the image zooms out according to the magnification factor currently in effect, which appears in the status bar at the bottom of the screen.

### *Magnifying a Portion of an Image*

1. Click **Magnification** to activate the magnifier cursor.
2. Click an image and hold. The magnification box appears. The portion of the image appearing within the bounds of the magnification box appears enlarged.
3. Continue holding the mouse button and moving the magnification box across the image to magnify other areas of

the image.

*Pan an Image*

1. With **Magnification** pressed, right-click the image and hold the mouse button. The cursor changes to the pan cursor.
2. Drag across the image and release the mouse button to stop.

## Flip and Rotate Functions

The toolbar has two flip and two rotate functions that you use to ensure proper orientation of the image prior to saving or sending:

### Flip Vertical

Click this button to flip an active image vertically.

### Flip Horizontal

Click this button to flip an active image horizontally.

### Rotate Left

Click this button to rotate an active image 90$^{o}$ left.

### Rotate Right

Click this button to rotate an active image 90$^{o}$ right.

### Black/White

Click this button to toggle an image between normal gray scale (negative image) and reverse gray scale (positive image).

## Undo

Click this button to revert all image manipulations you applied to an active image to the last save you performed on the image.

## Displays

### One-on-One Display

Click this button to display one image at a time on the screen.

### Two-on-One Horizontal Display

Click this button to display two side by side images on the screen.

### Two-on-One Vertical Display

Click this button to display two images top and bottom on the screen.

### Four-on-One Display

Click this button to display four images at a time on the screen.

### Synchronize Images

Click this button to synchronize manipulations to all displayed images.

---

**WARNING: If you manipulate or process images while synchronization is on, images could be affected that are currently not being viewed on the screen.**

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## SpeedSend

Click this button to send an active image to a location selected in the Destination drop-down list.

## Destination

Select a location to which you want to send an active image from the Destination drop-down list.

## Hide Text Overlay

Click this button to toggle display of the DICOM text overlays and annotations on an image.

## Read/Unread

Click this button to mark the image as read or unread.
Note: The Read/Unread flag is only local and all sent or retrieved images will appear as Unread.

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**WARNING: The Read/Unread feature is intended to be used only by the diagnosing physician. Use care when marking images with the Read/Unread flag.**

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## Reference pointer

Click this button to launch the cursor , then mark or pinpoint an area of interest on the image. An arrow will appear on the image where you clicked it. You can annotate an image with reference pointers angled at 45, 135, 225 or 315 degrees.

**Changing the Angle of a Reference Pointer**

1. Right-click a reference pointer.
2. From the right-click menu select Change Pointer to 45, 135, 225 or 315 degrees. The arrow changes respectively.

## L-Placing

Click this button to launch the cursor , then click a place on the image that you want to denote as the left side. With this notation in place, you won't lose the orientation of the image as it is rotated and flipped.

## Free Text

Click this button to launch the cursor , then click a place on the image where you wish to place an annotation. A text box is created on the image where you can freely type notes.

## Draw Lines

Click this button to launch the cursor , then click a place on the image where you wish your lines to start. Multiple clicks result in multiple lines as you move the mouse. Right-click to discontinue drawing the lines.

## Distance Measurement

Click this button to launch the cursor , and measure the distance between two points on an image. Click a place on the image where you want your measurement to start. Click again where you want your measurement to end.

## Angle Measurement

Click this button to launch the cursor , and measure the angle between a vertex and two endpoints on an image.

## Erase annotation

Click this button to launch the cursor , and enable you to erase annotations on an item-by-item basis.

## Move annotation

Click this button to launch the cursor , and move annotations from place to place on the image.

## Automatic Window/Level

Click this button to automatically apply a window/level value calculated for the active image.

Clicking **Automatic Window/Level** will automatically:

- Apply a window value that is calculated from the

difference between the highest pixel value and the lowest pixel value.

- Apply a level value that is calculated as the midpoint between the highest and lowest pixel value.

## Dynamic Window/Level

Click this button to launch the cursor . The window/level cursor enables you to dynamically control window width and center on an image.

1. Click **Dynamic Window/Level** to activate the window/level cursor.
2. Click the image on the point you wish to window/level, and hold. This specifies the anchor point of the subwindow.
3. As you drag the cursor, the subwindow appears. As you continue to drag, the subwindow displays changes.

### To change the center of the window (change brightness):

- Move the cursor down to increase brightness or up to decrease brightness.

### To change the width of the window (change contrast):

1. Move the cursor left to increase contrast or right to decrease contrast.
2. Release the cursor when you are satisfied with the changes. The subwindow closes and the window/level changes reflect on the full-size image.

## Air W/L

Click this button to apply a set window/level value optimized for an image whose focus is air.

### Tissue W/L

Click this button to apply a set window/level value optimized for an image whose focus is tissue.

### Bone W/L

Click this button to apply a set window/level value optimized for an image where focus is bone.

## Default Window/Level Settings for Preset Buttons

- Preset **Air** : width 1600, center 424
- Preset **Tissue** : width 350, center 1074
- Preset **Bone** : width 2000, center 1524

Window/level values are saved and forwarded when you send an image to other DICOM nodes.

## Window/Level Settings on DICOM Text Overlay

On the DICOM text overlay, **W** (width/window) and **C** (center/level) settings display in the lower-left corner of the image.

### Apply Mask

Click this button to mask collimated areas of the selected image.

## Set Image Processing

Click this button to display the image processing dialog box. The image processing dialog box allows you to configure image processing on the basis of examined body part and patient position. You can also choose to save a process for use as a preset in the process list box.

## Process

From the **Process** drop-down list, select a preset image process that you want to apply to an active image.

*Note:* Image processing is optimized for CR plates digitized by an attached ACR-2000 scanner.

For more information, see *Processing Images* on page 49.

## Help

Click this button to access this on-line help system.

## Exit

Click this button to close the ***Image Display*** window and return to the main application window.

# Processing Images

Image processing provides a method for enhancing image quality by increasing contrast and eliminating some image artifacts. Although some image processes, such as Grid Removal, may be beneficial when applied to digitized radiology film, image processing is optimized for CR plates scanned by an attached ACR-2000.

**WARNING: Image processing applied to some images may result in an image that is not adequate for diagnostic viewing.**

**WARNING: Processing images not acquired with an ACR-2000 may result in non-diagnostic quality images.**

## Applying a Preset Image Process

1. From the image display window, select a process value from the Process drop-down list. The image reflects the image process.

- **Unprocessed** — Removes processing from the image
- **VGRIDREM** — Vertical Grid Removal, removes vertical grids from an image
- **HGRIDREM** — Horizontal Grid Removal, removes horizontal grids from an image

- User Presets **1** through **9** — Administrator configurable image processes.

*Note:* An image can hold only one image process value. When you select another image process, KODAK General Radiography Software returns the image to its unprocessed version first, then applies the selection.

2. Then do one of the following:
   - Select another process from the Process drop-down list.

     – or –
   - To remove processing from the image, from the Process drop-down list, select Unprocessed.

     – or –
   - To save the image process, click **Save** .

     – or –
   - To return the image to its last saved setting, click **Undo** .

Image processing information is stored in the DICOM header and only the unprocessed version of the image is archived.

## Setting an Image Process for an Image

1. Click Set Image Processing from the ***Image Display*** window toolbar.
2. Select a body part that corresponds to the active image subject from the **Body Part** drop-down list. If you are performing quality assurance testing with a test pattern image, select **Test Pattern**.
3. Select a **Position** option that corresponds to the patient position.
   - **A/P** — Anterior/Posterior
   - **P/A** — Posterior/Anterior

- **LAT** — Lateral
- **OBL —** Oblique
- **DEC —** Decubitus

4. Select a Grid Removal option of **None**, **Horizontal** or **Vertical**.
5. If you want to continue to try various processing options on the active image, click **Apply**. This will apply the currently configured process to the active image and leave the dialog box open for further processing.
6. Click **OK**.

## *Unprocessing an Image and Removing Annotations*

There are times you will want to send an image in its raw format after it has already been processed. You can either have the receiver of the image Query/Retrieve the image, in which case they receive the raw format, or you can do the following to unprocess the image and remove annotations.

To unprocess an image:

1. Open the image(s) in the **Image Display** window.
2. Click synchronize if more than one image is displayed, then select **Unprocessed** from the Process drop-down list. The image reflects the image process.
3. Remove any annotations by doing the following:
   - Click **Erase Measurement** . The arrow cursor changes to an eraser tip cursor. Position the eraser tip on the annotation you want to erase and click.
4. Click **Save** .The image is saved without annotations and returned to its unprocessed version.

## *Image Setup Window*

If an ACR-2000 is attached to the application workstation, the **Image Setup Window** will be displayed each time **Scan** is invoked. The **Image Setup Window** provides pre-processing and requires that you:

1. Enter or Accept a Patient ID or Accession Number to which the image will be associated.
2. Select a **Body Part** for the image.
3. Select a **Projection** option that corresponds to the patient position on the active image.
   - **A/P** — Anterior/Posterior
   - **P/A** — Posterior/Anterior
   - **LAT** — Lateral
   - **OBL —** Oblique
   - **DEC —** Decubitus
4. Choose if you want to have vertical or horizontal grid removal on or off by clicking the **No**, **Horizontal**, or **Vertical** option.

*Note:* If you elect not to apply Grid Removal as part of the image's pre-processing, you can apply it later as part of the Image Display Window's Image Processing Dialog Box or the Process drop-down list on the Image Display Toolbar.

# Annotating Images

**WARNING: Annotations/measurements are for reference only and are not intended for diagnostic use.**

You can annotate your images with the following annotation buttons from the ***Image Display*** window toolbar, then save and send the image. All annotations scale and rotate with the image. All annotation information can be saved along with the image and sent to other destinations.

- Reference Pointer
- L-Placing
- Free Text
- Draw Lines
- Measure Distance

- Measure Angle

## Annotation Color

You can alternate between black and white annotations using the right-click menu.

1. From the Image Display window, ensure you are in the annotation mode by selecting an annotation from the toolbar.
2. Right-click an image.
3. From the right-click menu, select **Invert Annotation Color**. All annotations on the image change to black or white.

## Annotation Size

You can change the annotation size created using the Reference Pointer , Free Text , and L-Placing by using the right-click menu.

1. From the Image Display window, ensure you are in the annotation mode by selecting an annotation from the toolbar.
2. Right-click the annotation on an image.
3. From the right-click menu select **Increase Annotation Size** to enlarge the size of the annotation or select **Decrease Annotation Size** to make the annotation smaller.
4. Repeat to continue increasing or decreasing the size of the annotation.

## Moving Annotations

1. Click **Move Annotation** . The arrow cursor changes to a moving tip cursor .
2. Position the cursor on the annotation you want to move, press the button and hold it while you move the annotation to the desired location.
3. Click **Move Annotation** to release the button and reactivate the Image Display window toolbar.

## Erasing Annotations

1. Click **Erase Annotations** . The arrow cursor changes to an eraser tip cursor.
2. Position the eraser tip on the annotation you want to erase and click. Continue clicking each annotation you want to erase.
3. Click **Erase Annotations** to release the button and reactivate the Image Display window toolbar.

## Deleting Annotations

You can delete annotations using the right-click function.

1. From the Image Display window, ensure you are in the annotation mode by selecting an annotation from the toolbar.
2. Right-click an annotation on an image. The right-click menu is displayed.

3. Select **Delete Annotation**. The annotation is deleted.
4. Repeat the function for each annotation.

## Measurements

You can apply angle and distance measurements to one image at a time.

**WARNING: Measurements are for reference only and not intended for diagnostic use.**

## Measuring Distance

You can measure distance in centimeters, accurate to the nearest 1/10 cm.

1. Click **Distance Measurement** . The arrow cursor changes to a Distance Measurement cursor.
2. Position the plus cursor where you want to anchor the first endpoint and click.
3. Move the plus cursor where you want to place the second endpoint and click. A line connects the two points and the distance annotation appears at the center of the line.
4. Perform another measurement or click **Distance Measurement** to release the button and reactivate the

Image Display Window toolbar.

## *Measuring Angles*

You can measure angles in degrees, accurate to the nearest 5 $^{o}$.

1. Click **Angle Measurement** . The arrow cursor changes to an angle cursor.
2. Position the cursor where you want a line to begin and click.
3. Move the angle cursor where you want the line to end and click. A line connects the two points.
4. Move the pointer where you want to place the second line and click.
5. Move the angle cursor where you want to place the second line's endpoint and click. A line connects the two points and the angle measurement is displayed.
6. Perform another measurement or click **Angle Measurement** to release the button and reactivate the ***Image Display*** window toolbar.

# Sending Images

## SpeedSend

Click **SpeedSend** to send a saved, active image to the location selected in the **Destination** drop-down list.

1. Display an image in the Image Display window. For more information, see Displaying Images.
2. Select a location to send the image from the **Destination** drop-down list.
3. Click **SpeedSend** .

## Sending Patients, Studies, Series and Images

You can send one or more items to a destination called a node. For more information about sending to a destination and/or about creating Address entries, see the *System Administrator's Reference Guide.*

**WARNING: When an image with processing or annotations is sent, the image pixel data is modified to include any processing and annotations. Once the image is received at the remote station, the processing and annotations cannot be removed from the image.**

Note: If the user at the remote viewing station would like to see the unprocessed or unannotated image, the user at the source station must remove processing or annotations, save the image, and send it to the remote station.

1. On the ***Communications*** window, select a destination nickname from the Nodes column.
2. On the ***Patients*** window, select the Patient, Study, Series, or Image that you want to send. To make multiple selections, hold the **CTRL** key while clicking. Then do one of the following:

   - Click **Send** .

     – or –

   - Right-click. The right-click menu appears. Scroll to ***Send*** and click.

     – or –

   - Drag the items from the Patients window and drop them in the Node in the ***Communications*** window.

Files are sent to the selected destination. The status bar displays the sending status.

# Printing Images

## Printing to a DICOM Printer

You can print multiple images, including the images annotations and any window/level information or processing information, to a DICOM printer. You can simply use the drag-and-drop feature to move the images to the node specified for DICOM printing in your Communications window or follow the directions below.

*Note:* When you send an image that has been processed to a DICOM printer, the processed image, not the raw image, prints.

**WARNING: The DICOM printing capability is intended for reference only and not for diagnosis.**

**Sending an image to a DICOM printer from the *Main Application* window:**

1. On the ***Communications*** window, select a **DICOM printer** node.
2. On the ***Patients*** window, select the image(s) you want to print. To make multiple selections, hold the **CTRL** key while clicking. Then do one of the following:

   • **Click** Send .

   – or –

   • Right-click. The right-click menu appears. Scroll to ***Send*** and click.

   – or –

   • Drag the image(s) from the **Patients** window and drop

images in the **DICOM printer node**.

The **DICOM Print: Printer** dialog opens.

3. From the **DICOM Print: Printer** dialog, select the Page Layout: 1x1, 1x2, 2x2, 3x3, or 4x4. The Number of Pages field adjusts accordingly.
4. Select the appropriate tray associated with the film orientation: Portrait or Landscape.
5. Click **OK**. Ensure the images printed to the selected tray.

**Sending an image to a DICOM printer from the Image Display window:**

1. Open the images in the **Image Display** window.
2. Select a DICOM printer node in the **Destination** drop-down list.
3. Click SpeedSend .
4. Follow steps 3-5 above.

## *Printing to a Windows Printer*

From the ***Image Display*** window, you can print multiple images on a single sheet, including the DICOM overlay, to a Windows printer. Windows print capabilities support gray scale printing only.

Note: When you send an image that has been processed to a Windows printer, the processed image, not the raw image, prints.

**WARNING: The Windows printing capability is intended for reference only and not for diagnosis.**

### Sending Images to a Windows Printer

1. On the ***Patients*** window, select the image(s) you want to print. To make multiple selections, hold the **CTRL** key while

clicking.

2. Open the image(s) by doing one of the following:
   - Right-click and selecting **Display Image**
   - Double-click the selection(s)
   - Click **Display Image** .
3. If you selected multiple images to print, click Synchronize .
4. Click **Windows Print** **.** The ***Windows Print*** dialog box opens.
5. Select the Page Layout: 1x1, 1x2, 2x2, 3x3, or 4x4.
6. Select the number of copies to be printed.
7. The page orientation for the printing defaults to the setting of your Windows printer.
8. Click **OK**. The image(s) print including the DICOM overlay.

# Archiving Images

*Note:* If you are performing scans with an ACR-2000, you should always archive all images acquired at your workstation.

You can archive patient records to either or both a local archive and a DICOM archive .

## Archiving Images to a Local Archive

When you perform a Local archive, KODAK General Radiography Software sends the selected images to one of the nodes specified by your system administrator.

When you archive images to a local archive, you can use the drag-and-drop feature to move the images to the node specified for your local archive in your Communications window.

*Note:* When you archive images, image processing and window/level information are stored in the DICOM header.

1. In the ***Communications*** window, select a Local archive nickname.
2. In the ***Patients*** window, select the Patients or Studies you want to send to the Local archive. To make multiple selections, hold the **CTRL** key while clicking. Then do one of the following:

   • Click **Send** .

   – or –

   • Right-click in either the ***Patients*** or ***Communications***

window. The right-click menu appears. Scroll to ***Send*** and click.

– or –

- Drag the selection(s) from the Patient's window and drop them into the local archive of the ***Communications*** window.

KODAK General Radiography Software verifies that records sent are successfully received by the Local archive.

- If the Local archive is successful, the **Archive** column reflects a ***Y*** archive status for the image.
- If the Local archive is unsuccessful, the **Archive** column reflects an ***N*** archive status for the image.

## Archiving Images to a DICOM Archive

When you archive images to a DICOM archive, you can use the drag-and-drop feature to move the images to the node specified for your DICOM archive in your Communications window.

Note: When you archive images, image processing, annotations and window/level information are stored in the DICOM header. The unprocessed version of the image is archived.

1. On the ***Communications*** window, select a DICOM archive nickname.
2. On the ***Patients*** window, select the Patients or Studies you want to send to the DICOM archive. To make multiple selections, hold the **CTRL** key while clicking. Then do one of the following:

   - Click **Send** .

   – or –

   - Right-click. The right-click menu appears. Scroll to ***Send*** and click.

   – or –

   - Drag by holding the left mouse button and moving the cursor to the ***Communications*** window. The cursor changes when you can drop images onto the selected DICOM archive. Release the mouse button.

KODAK General Radiography Software verifies that records sent are successfully received by the DICOM archive. Verification begins 30 seconds after the records have been sent.

- If the DICOM archive is successful, the **Archive** column reflects a ***Y*** archive status for the image.
- If the archive is unsuccessful, the **Archive** column reflects an ***N*** archive status for the image, and the failure is recorded in a log file. For more information, see Open a Log File.

# Deleting Images

Deleting images from your local database while you are attempting to send those images to a destination may cause the transmission to fail; therefore, be sure your transmission of those images has completed before deleting the images.

*Note:* Before you delete a CR image from your local database, you should first archive it to a local or DICOM archive. For more information about archiving, see *Archiving Images* on page 65.

To delete images, do one of the following:

- On the ***Patients*** window, select the Patient, Study, Series, or Image. To make multiple selections, hold the **CTRL** key while clicking. Drag the selections and drop them into Recycle Bin.

– or –

- On the ***Patients*** window, right-click the **Patient**, **Study**, **Series**, or **Image**. To make multiple selections, hold the **CTRL** key while left clicking, then right-click any selection. The right-click menu appears. Scroll to ***Delete***, then click.

## *Recycle Bin*

CR Only

The **Recycle Bin** — the trash can icon located on the lower-left corner of the Communications window — permits you to delete and restore unarchived images.

All images on a system with a film scanner, when deleted, are permanently deleted.

- Position your cursor over the Recycle Bin to display the ToolTip. The ToolTip displays the contents of the Recycle Bin and available space.

**WARNING: Archived images placed in the Recycle Bin are permanently deleted and cannot be restored via the Recycle Bin.**

When unarchived Patient images are in the **Recycle Bin**, the trash can will inflate. Double-clicking the trash can icon displays the ***Recycle Bin window***, where unarchived images can be restored to the application main window.

Note: Only administrators can permanently delete unarchived images.

### Recycle Bin Window

Double clicking the trash can icon displays the ***Recycle Bin window***, where unarchived images can be restored to the application main window.

The ***Recycle Bin window*** displays patient information in the DICOM hierarchy format: Patient, Study, Series, Image. Each level shows the information appropriate to that level.

You can display or hide a level by clicking the + or – above that level. You can expand some levels in the list by clicking the DICOM database level.

The ***Recycle Bin window*** displays information in the following sortable columns:

- Patient Name — Name of the patient.
- Patient ID — Identification number assigned to the patient.
- Number of Images — Total number of images in the Patient, Study, and Series levels.
- Date & Time — Date and time the study was created.
- Size — Size, in kilobytes or megabytes (KB or MB), of the Patient, Study, Series, and Image files or levels. The total size at the Patient level may not equal the sum of the Study, Series, and Image levels due to rounding.
- Priority — Stat, Regular, Low. The Patient level displays the priority of the highest priority series.
- Accession Number — Patient visit identification.

## Restoring Images From the Recycle Bin

1. Select a **Patient**, **Study**, **Series**, or **Image** from the displayed list that you want to restore. Click on an item to select it, or to make multiple selections, hold the control key while clicking each item.

2. Click **Restore** . The selected items will be restored to the *Patients window.*

**Note:** *This option will only be available when an item has been selected to restore.*

## Permanently Deleting Images From the Recycle Bin

**Note:** *This option is only available to administrators.*

1. Select the unarchived **Patients**, **Studies**, **Series**, or **Images** from the displayed list that you want to permanently delete. Click on an item to select it, or to make multiple selections, hold the control key

while clicking each item.

2. Click **Delete** .

**Note:** *CR Images should* **always** *be archived before being permanently deleted.*

## *Closing the Recycle Bin*

- Click **Exit** to close the ***Recycle Bin*** window.

# Communications

## Communications Window

From the ***Communications*** window you can:

- Create and edit remote-site, local archive, DICOM archive, worklist broker, DICOM printer, and group address entries. (Administrator function.)
- Send files to **individual** and **group sites**.
- View lossy file-compression status of address nicknames on the *Nodes* column.
- Perform and accept **DICOM query** operations to and from other DICOM nodes.
- Perform and allow **DICOM retrieve** operations to and from other DICOM nodes.
- Check the availability of remote DICOM sites to receive file transfers.
- Drag images from the Patients List and drop them in the ***Communications*** window.
- Print to a high-resolution **DICOM printer**.
- Store and retrieve files in your **local archive**.
- Store and retrieve files in a **DICOM archive**.
- Query and retrieve patient demographic information from a **Worklist Broker**.
- Check and modify status of **DICOM operations**.
- Drag and drop to the **Recycle Bin** to delete selected items.
- Open the **Recycle Bin** to recover unarchived CR files.

## *Communications Toolbar*

You can create and edit addresses and groups, perform query, retrieve and check site operations, and send images to a selected destination using the ***Communications*** window toolbar. When you click a button, the setting for that function is applied.

### New Address

- Click **New Address** to open the ***Address Entry*** window, which allows you to enter information needed to communicate with other DICOM nodes. This is usually done by a system administrator. See the *System Administrator Reference Guide.*

### New Group

- Click **New Group** to open the ***Group Setup*** window, which allows you to create groups of addresses. For more information about the ***Group Setup*** window, see Group Setup Window. This is usually done by a system administrator. See the *System Administrator Reference Guide.*

### Query/Retrieve

- Click **Query/Retrieve** to open the ***Query*** window for an address selected from the ***Communications*** window. The ***Query*** window allows you to query remote DICOM nodes, DICOM archives, modality worklist brokers, and your local archive for files which you can retrieve to your local database. If no address is selected, **Query/Retrieve** appears dimmed. For more information about **Query/Retrieve**, see Query an AE , Query a Local Archive, To Query a DICOM Archive, or Query a Worklist Broker.

### Check Site

- Click **Check Site** to determine whether a DICOM address selected from the ***Communications*** window is available for file transfer. If no DICOM address is selected, or the selected address is not a remote DICOM location, **Check Site** appears dimmed. For more information about **Check Site**, see Check a Remote DICOM Site.

### Send

- Click **Send** to send a selected Patient Information, Study, Series, or Image to a selected destination. If there are no addresses *and* corresponding image files selected, **Send** appears dimmed. For more information about **Send**, see To Send Patients, Studies, Series, or Images.

### DICOM Request Status

- Click **DICOM Request Status** to open the DICOM Request Status window—where you can check status or reprocess a DICOM request.

- there are no postponed or failed requests

- there are rescheduling attempts

- one or more attempts have failed. For more information about DICOM Request Status, see DICOM Request Status.

## Communications Right-Click Menu

The ***Communications*** right-click menu provides access to some of the ***Communications*** toolbar functions. For descriptions of the toolbar functions, see Communications Toolbar.

## Checking a Remote DICOM Site

Use this feature to check a site's communication status before sending images to the site.

1. Select an Address **Nickname** from the ***Nodes*** list.

   - Click **Check Site** on the ***Communications*** window toolbar. The selected remote site is checked for DICOM communications status and a message is displayed with that site's availability.

     – or –

   - Select **Check Site** on the ***Communications*** window right-click menu. The remote site is checked for DICOM communications status and a message is displayed with that site's availability.

# Querying/Retrieving

## Selecting a Node/Address

On the ***Communications*** window, you can select addresses (nicknames) on the ***Nodes*** list in any of the following ways:

- **Left-Click —** Provides the standard method of selecting a node. You can then apply a function from the toolbar or use the drag-and-drop feature to move the node to the **Recycle Bin**.
- **Right-Click —** Provides access to some of the toolbar functions for the selected node.
- **Double Left-Click —** Opens the ***Query*** dialog box for a selected *Worklist Broker*, *AE*, or *Local Archive* address nickname.

## Allowing DICOM Retrieve Operations

You can set up KODAK General Radiography Software to allow retrieve operations of unprocessed images by other DICOM nodes. When another DICOM node retrieves from your local database, the status bar at the bottom of your screen shows the sending status.

To allow retrieve operations, make sure the target computer's ***Address*** with the corresponding **Retrieve AE Title** and ***Port Number*** is entered. Your computer's ***Address***, ***AE Title*** and ***Port Number*** may need to be in the target computer's Address Book.

*Note:* When you allow another DICOM node to retrieve images from your local DICOM node, KODAK General Radiography Software allows retrieval of only the unprocessed versions. If

the user at the destination requires the processed version, the user must request that you manually send it to their DICOM node.

## *Querying Using Null Values and Wildcards*

If your system supports wildcards, you can use null values and wildcards to define your query. Wildcards let you search for character patterns. You can:

- Use a null value (zero-length value) to return all entities for a selected query field.
- Use an asterisk (*) to match zero or more characters for a selected query field. For example: * returns all entities for a selected query field.
- *W** finds words that begin with *W*, such as *Wilson* and *Williamson*.
- Use a question mark (?) to match a single character for a selected query field. For example, *B?rt* finds four-letter words that begin with *B* and end with *t*, such as *Bart* and *Burt*.

*Note:* Your query results may vary depending upon the remote site you are querying.

## *Nodes*

### Query a Node

From your workstation, you can query a remote node to download patient images to your local database.

### Query Dialog Box

- Double click a node in the Communications window to open the ***Query*** dialog box, which you use to query a node and download selected patient images to your local

database.

– or –

- Select a node and click **Query/Retrieve** to open the **Query** dialog box.

### Query Criteria

The ***Query*** dialog box contains query criteria that you use in combination with one another to refine your query results. You can also use null values and wildcards to define your query; see Querying Using Null Values and Wildcards.

- **Accession Number —** Patient visit ID, which you type using up to 16 text characters. The default value is null. This text box is case sensitive. Wildcards are not supported in the *Accession Number* text box.
- **Patient Name —** Name of the patient, which you type using up to 64 case-sensitive text characters. The default value is the wildcard character *.
- **Patient ID —** Identification number assigned to the patient, which you type using up to 64 case-sensitive alphanumeric characters excluding \ (backslash), ' (apostrophe or single quote), and | (pipe). The default value is the wildcard character *.
- **Modality —** Type of radiography performed, which you select from a drop-down list.
- **Enable Date/Time —** When checked, enables a query to also be performed on the basis of date and time.
  - **Start Date/End Date —** The date range of the entries for which you want to query, which you select by clicking the arrows to choose a new date or by typing in a new value. The default values for *Start Date* and the *End Date* are the current system date.
  - **Start Time/End Time —** The time range of the entries for which you want to query, which you select from the drop-down lists. The default values for *Start Time* and *End Time* are 00 00 and 24 00.

#### Query

Click **Query** to query the **Node** with the values you entered on the ***Query*** dialog box.

### Cancel

Click **Cancel** to cancel the query in progress, close the ***Query*** dialog box, and return to the ***Communications*** window without saving changes.

## Query a DICOM Archive

From your workstation, you can query a DICOM Archive to download patient images to your local database.

### Query Dialog Box

- Double click a **DICOM Archive Address Nickname** on the Nodes list to open the ***Query*** dialog box, which you use to query a DICOM Archive and download selected patient images to your local database.

  – or –

- Select a **DICOM Archive Address Nickname** and click **Query/Retrieve** to open the **Query** dialog box.

## Retrieve From a Node

**WARNING: When an image with processing or annotations is retrieved, the image is provided without including either the processing or the annotations.**

Note: If the user at the remote viewing station would like to see the processed or annotated image, the user at the source station must send it to the remote station.

Note: When you retrieve files, KODAK General Radiography Software first reads available space on your local hard drive, then retrieves the selected files if there is enough space. If there is not enough free drive space, a message alerts you that the retrieve is cancelled. You should then archive and delete images to free up local drive space before attempting another retrieve.

KODAK General Radiography Software queries the Node and opens the ***Retrieve*** window, which displays a list of patients meeting your query criteria.

The ***Retrieve*** window displays patients from a Node (on the basis of your query criteria), that are available for retrieval into the acquisition and scanning program's database.

The column headings on the ***Retrieve*** window correspond to the fields in the ***Query*** window. For more information on these fields, see Query a Node. Each column can be sorted by clicking the column name.

- Accession Number
- Patient Name
- Patient ID
- Modality
- Date
- Time
- Study Description

To import the Patient images to your local database:

1. Select the patient(s) you want to import. To make multiple selections, hold the **CTRL** key while clicking each item.
2. Click **Retrieve**. KODAK General Radiography Software retrieves the patient images, imports them to your local database, and closes the ***Retrieve*** window. The Patients list updates to reflect the retrieved records.

Note: If you attempt to retrieve a patient containing an invalid Patient ID format, a message alerts you that KODAK General Radiography Software will not accept the retrieval.

# *Archives*

## Retrieve From a DICOM Archive

Note: When you retrieve files, KODAK General Radiography Software first reads available space on your local hard drive, then retrieves the selected files if there is enough space. If there is not enough free drive space, a message alerts you that the retrieve is cancelled. You should then archive and delete images to free up local drive space before attempting another retrieve.

KODAK General Radiography Software queries the ***DICOM Archive*** and opens the ***Retrieve*** window, which displays a list of patients meeting your query criteria.

The ***Retrieve*** window displays patients, on the basis of your query criteria, from a ***DICOM Archive*** that are available for retrieval into the acquisition and scanning program's database.

The column headings on the ***Retrieve*** window correspond to the fields in the ***Query*** window. For more information on these fields, see Query a DICOM Archive. Each column can be sorted by clicking on the column name.

- Accession Number
- Patient Name
- Patient ID
- Modality
- Date
- Time
- Study Description

Note: Information displayed in the fields listed above depends on what is supported by the DICOM nodes.

1. To import the Patient images to your local database, select the patient(s) you want to import. To make multiple selections, hold the **CTRL** key while clicking each item.
2. Click **Retrieve**. KODAK General Radiography Software retrieves the patient images, imports them to your local database, and closes the ***Retrieve*** window. The Patients list updates to reflect the retrieved records.

*Note:* If you attempt to retrieve a patient containing an invalid Patient ID format, or an image which is already in your local database, a message alerts you that KODAK General Radiography Software will not accept the retrieval.

## Query a Local Archive

From your workstation, you can query a Local Archive to download patient images to your local database.

**Query Dialog Box**

- Double click a the Local Archive node from the Communications window to open the ***Query*** dialog box.

– or –

- Select a **Local Archive Address Nickname** and click **Query/Retrieve** to open the **Query** dialog box.

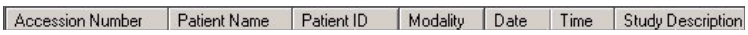
## Retrieve From a Local Archive

Note: When you retrieve files, KODAK General Radiography Software first reads available space on your local hard drive, then retrieves the selected files if there is enough space. If there is not enough free drive space, a message alerts you that the retrieve is cancelled. You should then archive and delete images before attempting another retrieve to free up local drive space.

KODAK General Radiography Software queries the ***Local Archive*** and opens the ***Retrieve*** window, which displays a list of patients meeting your query criteria.

The ***Retrieve*** window displays patients, on the basis of your query criteria, from a ***Local Archive*** that are available for retrieval into the KODAK General Radiography Software database.

The column headings on the ***Retrieve*** window correspond to the fields in the ***Query*** window. For more information on these fields, see Query a Local Archive. Each column can be sorted by clicking on the column name.




- Accession Number
- Patient Name
- Patient ID
- Modality
- Date
- Time
- Study Description

1. To import the Patient images to your local database, select the patient(s) you want to import. To make multiple selections, hold the **CTRL** key while clicking each item.
2. Click **Retrieve**. The program retrieves the patient images, imports them to your local database, and closes the ***Retrieve*** window. The Patients list updates to reflect the retrieved records.

Note: If you attempt to retrieve a patient containing an invalid Patient ID format, a message alerts you that the program will not accept the retrieval.

# *Worklist Brokers*

## Query a Worklist Broker

The modality worklist broker provides a DICOM interface with a hospital or radiology information system. From your workstation, you can query the worklist broker to download worklist information about scheduled procedures, arrived procedure status, and related patient demographic data.

**Modality Worklist Dialog Box**

- Double click a **Worklist Address Nickname** on the Nodes list to open the ***Modality Worklist*** dialog box, which you use to query a modality worklist broker and download

selected patients to your local database.

– or –

- Select a **Worklist Address Nickname** and click **Query/ Retrieve** to open the **Query** dialog box.

### Worklist Query Criteria

The ***Modality Worklist*** dialog box contains query criteria. You use these criteria in combination with one another to refine your query results. You can also use null values and wildcards to define your query; see Querying Using Null Values and Wildcards.

- **Accession Number —** Patient visit ID, which you type using up to 16 text characters. The default value is null. Wildcards are not supported in the *Accession Number* text box.
- **Patient Name —** Name of the patient, which you type using up to 64 case-sensitive text characters. The default value is the wildcard character *.
- **Patient ID —** Identification number assigned to the patient, which you type using up to 64 characters. The default value is the wildcard character *.
- **Modality —** Type of radiography performed, which you select from a drop-down list.
- **Start Date/End Date —** The date range of the worklist entries for which you want to query, which you select by clicking the arrows to choose a new date or by typing in a new value. The default values for *Start Date* and the *End Date* are the current system date in the format: mm/dd/yy.
- **Start Time/End Time —** The time range of the worklist entries for which you want to query, which you select from the drop-down lists. The default values for *Start Time* and *End Time* are 00 00 and 24 00.
- **AE Title —** Name of the application entity (typically the scanning station) for which you want to retrieve worklist entries and which you specify by typing up to 16 alphanumeric characters. The initial default value is your local AE title. *(Note: If your broker does not specify worklist entries by AE title, leave this field blank.)* This text box is case sensitive. Null values are supported in the *AE Title* text box; wildcards are not.

- **Procedure Status —** Status of the procedure, which you select from a drop-down list containing *Scheduled* and *Arrived.* The default value is null.
- **Performing Physician —** The name of the physician scheduled to administer the procedure, which you type using up to 64 text characters. The default value is the wildcard character *.

### Set Default

Click **Set Default** (if you are an administrator) to save the currently displayed query values on the dialog box as your default values (with the exception of *Start Date* and *End Date,* which have no default values). These values display as your defaults the next time you open the ***Modality Worklist*** dialog box.

### Query

Click **Query** to query the modality worklist broker with the values you entered on the ***Modality Worklist*** dialog box.

### Cancel

Click **Cancel** to cancel the query in progress, close the ***Modality Worklist*** dialog box, and return to the ***Communications*** window without saving changes.

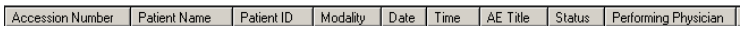
## Retrieve From a Worklist Broker

*Note:* When you retrieve files, the program first reads available space on your local hard drive, then retrieves the selected files if there is enough space. If there is not enough free drive space, a message alerts you that the retrieve is cancelled. You should then archive and delete images to free up local drive space before attempting another retrieve.

The program queries the worklist broker and opens the ***Select Patients*** window, which displays a list of patients meeting your query criteria.

The ***Select Patients*** window displays patients, on the basis of your query criteria, from a worklist broker that are available for retrieval into the acquisition and scanning program's database.

The column headings on the ***Select Patients*** window correspond to the fields in the ***Modality Worklist Query*** window. For more information on these fields, see Query a Worklist Broker. Each column can be sorted by clicking on the column name.




- Accession Number
- Patient Name
- Patient ID
- Modality
- Date
- Time
- AE Title
- Status
- Performing Physician

1. To import the Patient demographics to your local database, select the patient(s) you want to import. To make multiple selections, hold the **CTRL** key while clicking each item.
2. Click **OK.** The program retrieves the patient records, imports them to your local database, and closes the ***Select Patients*** window. The Patients list updates to reflect the retrieved records.

If you attempt to retrieve a patient from a worklist broker that already exists in your local database, a message asks you if you want your database to be overwritten with new information from the worklist broker.

Note: If you attempt to retrieve a patient containing an invalid Patient ID format, a message alerts you that the program will not accept the retrieval.

# Appendix A: Troubleshooting

| Possible Problem | Resolution/Explanation |
|---|---|
| Jammed film or plate | Ensure the scanner motor has stopped. If necessary, at the scanner, press Scan Abort. If the jam does not clear, refer to Section 3.0 System Operation of the Lumiscan LSDT Service Manual. If the jam still does not clear, call your certified service provider.<br>Note: If you turn off and on the scanner you must wait at least five minutes before scanning. |
| Image Files Sent with Incorrect Compression | You can send images to other DICOM nodes in compressed or uncompressed formats. If an addressee is setup to receive lossy compression, a yellow triangle appears next to the nickname on the Communications Window. |
| Image Processing Failure | If an Image Processing Warning appears, contact your system administrator, or, CR system representative if you are an administrator, describe the failure and give them the name of the selected process that failed and the accompanying error code. |
| Improper Image Acquisition: Host PC Too Busy | To ensure adequate system performance, an administrator must configure your system with the minimum hardware and software as specified in the Hardware Compatibility List furnished with the KODAK General Radiography Software. |

| Possible Problem | Resolution/Explanation |
|---|---|
| Improper Image Orientation | Review each scanned image and, as necessary, use the following functions to orient the image properly.<br>Flip Vertical - Click this button to flip an active image vertically.<br>Flip Horizontal - Click this button to flip an active image horizontally.<br>Rotate Left - Click this button to rotate an active image $90^{o}$ left.<br>Rotate Right - Click this button to rotate an active image $90^{o}$ right. |
| Unable to store images | Ensure that your image directory resides on your local hard drive; otherwise, a network failure prevents you from accessing remotely stored images. |
| Incomplete image acquisition due to improper data control board (DCB) settings | Scanner DCBs have on-board RAM that temporarily stores the scanned image before the KODAK General Radiography Software retrieves it. Your certified service provider must validate the DCB settings after the KODAK General Radiography Software installation as well as after installation or upgrade of the DCB. |
| Images Sent to Wrong Destination | Ensure the target computer's address with the corresponding Send/Receive AE Title and Port Number is entered on the Address Entry Dialog Box. Ensure the sender's address is in the target computer's Address Book. Drag the correct image(s) from the Patient list and drop it into the address in the Communications Window. |
| Transmission failure | Open the events log to view which DICOM node failed transmission.<br>Perform a *Check Site* to ensure the remote site is available for receiving images. If the remote site is not available, contact the remote site personnel to determine availability. |
| Repeated transmission failure | Ensure that you are using a unique patient ID when sending to another DICOM node. Contact the remote site personnel to determine if they are having a database conflict due to duplicate file information. |

| Possible Problem | Resolution/Explanation |
|---|---|
| Repeated transmission failure to a specific destination | If you are experiencing repeated transmission failure to a specific destination:<br>1) Perform a *Check Site* to determine the DICOM availability of the remote location.<br>2) Contact the remote site personnel and verify they have your workstation's IP or DNS address, AE Title, and Port Number in their local address book and that they permit the type of DICOM operation you are attempting. |
| Communications Window Toolbar displays:<br>***Rescheduling attempts***<br> <br>***One or more attempts have failed***<br> | Click the DICOM Request Status button to display the DICOM Request Status window and do one of the following:<br>• Wait for the system to reattempt the request<br>• Clear the request<br>• Reprocess the request<br>1) From the DICOM Request Status Window, select the request from the list. To make multiple selections, hold the **CTRL** key while clicking each item.<br>3) Click one of the following buttons:<br>• **Clear All Requests** — clears all pending requests<br>• **Clear Request** — clears the request<br>• **Reprocess Request** to reprocess the selected requests |

# Appendix B: Warnings

**The following warnings are intended to prevent any potential patient or operator safety hazards. Please read them carefully.**

| WARNING |
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| It is highly recommended that you<br>• Periodically perform preventive maintenance of your local hard drive(s) using Windows 2000 Administrative Tools to reduce the chances of disk crashes.<br>• Frequently archive all data on your hard disk to avoid data loss in the event of a hard disk crash.<br>• Periodically check your local storage device(s) and media for defects to reduce the chances of data corruption. |
| The DICOM and Windows printing capability is intended for reference only and not for diagnosis. |
| The technician must ensure proper orientation of the image prior to saving or sending. The diagnosing physician must make sure the scanned image is oriented properly before making a diagnosis. |
| The Read/Unread feature is intended to be used only by the diagnosing physician. Use care when marking images with Read/Unread. |
| Run the Self-Test regularly to ensure acceptable ACR-2000 performance. |
| Stopping the scanner or pressing the Scan Abort button results in lost CR plate content and may result in an improper image acquisition or a lost image. |
| Images scanned on the ACR-2000 scanner at 1K (1024 pixels/line) or lower resolution may not be of diagnostic quality. |
| Jammed films or plates could cause improper image acquisition. |
| If you manipulate or process images while synchronization is on, images could be affected that are currently not being viewed on the screen. |

| WARNING |
| --- |
| Ensure the correct match has been found for the Accession number while using the Scan Wizard; otherwise, you could have the incorrect patient information. |
| The displayed image (during the Scan Wizard) is intended for ensuring correct image orientation and not for diagnosis. |
| Annotations/measurements are for reference only and are not intended for diagnostic use. |
| Image processing applied to images not acquired with an ACR-2000 may result in non-diagnostic quality images. |
| Improper equipment operation may result in injury to personnel due to the laser. All digitizer users must be trained in the proper operation of equipment by certified service providers. |
| Improper installation, hardware configuration, and maintenance could result in improper image acquisition or lost images. |
| KODAK General Radiography Software is optimized to run across local area networks (LANs). If sending patient records to your selected destination requires the use of a wide area network (WAN), you may experience transmission difficulty due to the inherent unreliability of WANs. You should contact the remote site to verify they received the expected patient records and resend if necessary. |
| All images must have patient identification burned into the image at the time the x-ray is taken. |
| KODAK General Radiography Software is not intended to be used for primary diagnosis of received images. |
| When an image with processing or annotations is sent, the image pixel data is modified to include any processing and annotations. Once the image is received at the remote station, the processing and annotations cannot be removed from the image. |
| When an image with processing or annotations is retrieved, the image is provided without including either the processing or the annotations. |
| Configure the monitor for square pixels; otherwise, the image aspect ratio could be incorrect. |
| Lossy-compressed images may not be of diagnostic quality. Compressed files take less time to transmit, but lossy compressed files result in data loss and lower image quality. |

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